

## **Guidelines for Preparation of Co-op Work Term Reports for the School of Engineering**

The work term report provides the opportunity for students to consider their experience in some depth and is a worthwhile approach to enhance learning and career planning. In addition, the content of the report can be used by students when they complete the Professional Engineers Ontario (PEO) pre-graduation experience record. This record must be submitted in order for the PEO to consider co-op experience (beyond the halfway point of the academic program) as credit towards the experience requirement for licensing.

Students are required to submit a report for each Co-op work term; however, students on an 8 month work term, in the same job with the same employer, submit only one report at the end of the 8 months. This work report format does not preclude students from preparing a technical report for their co-op employer.

### **Objectives of the Work Term Report**

The objectives of the work term report are to document the experience gained, skills developed and learning that occurred during the work term and to identify future learning and experience needs.

### **Content of the Work Term Report**

A Work Term Report includes:

- Summary of responsibilities and duties performed
- Learning objectives
- Description of engineering experience in the following areas:
  - Application of theory
  - Practical experience
  - Management of engineering
  - Communication skills
  - Social implications of engineering
- Critical analysis of experience and learning
- Conclusions

In addition, a title page must be provided which includes all of the following information:

- Appropriate title reflecting work experience
- Name and student number
- Program of study
- Faculty Advisor for your program
- Work term number
- And employer (organization)

The Co-op Work Term Report - Employer Comments Form must be submitted with the work term report. The Employer must also confirm that the contents of the work report do not disclose confidential information. Reports should be logically organized into sections and properly formatted including section headings and a table of contents. Font size should be at least 11 point and spacing should be at least 1.5 lines. There are no minimum or maximum page limits for co-op work term reports. However, as a guideline, most reports for Work Term 1 are less than 10 pages. Reports for 8 month work terms and reports for 4 month work terms in the final year of the program, may be a little longer (10 -15 pages). Most importantly, reports must contain sufficient content of acceptable quality and convey the content in a concise manner.

## **Further Guidance on Preparing the Content of the Work Term Report**

### **Summary of Responsibilities and Duties Performed**

Briefly describe the organization you worked for and the type of activities the organization performs in a paragraph. Provide a description of your job responsibilities and duties performed. Describe the types of activities performed emphasizing the technical nature of your work. A detailed analysis of your work is not required, but sufficient detail highlighting your engineering experience is expected. Consider including figures where they can replace lengthy descriptions of equipment or processes. The projects and the work environment to which you were exposed and any training you received are also relevant. This section is intended to provide background and context for the subsequent discussion of engineering experience. If your position entailed a multitude of tasks, select some key examples to illustrate the range of work in which you were engaged.

### **Learning Objectives**

Provide the learning goals that you developed as part of the requirements set out by the Co-op Office. Include any additional learning objectives identified over the course of the work term. When introducing your learning objectives indicate how these objectives fit into your career goals and how they build upon your earlier work experience. Your learning objectives should reflect your critical analysis of previous work terms.

### **Description of Engineering Experience**

To become a licensed Professional Engineer, you require at least 48 months of work experience. Up to one year of experience is credited for co-op work experience gained in the second half of an engineering program. Work experience must provide exposure to elements of engineering including: application of theory, practical work experience, management of engineering, communication, and social implications of engineering. All engineering experience is expected to include application of theory and practical experience. The PEO's Pregraduation Experience Record Guide provides many examples of acceptable engineering experience under each of the five categories. Please refer to: [http://www.peo.on.ca/index.php/ci\\_id/22884/la\\_id/1.htm](http://www.peo.on.ca/index.php/ci_id/22884/la_id/1.htm)

### **Application of Theory:**

- All engineering jobs should include some aspect of application of theory.
- Clearly indicate how your work experience provided exposure to the application of theory in one or more of the following categories:
  - o Analysis
  - o Design and Synthesis
  - o Testing Methods
  - o Implementation Methods

### **Practical experience:**

- All engineering jobs should include some aspect of practical experience.
- Describe opportunities you had to gain practical experience and the knowledge or insights you acquired such as understanding the function of components in a system, the limitations of practical engineering, and the significance of time to engineering.
- Demonstrate your understanding of the laws, regulations, codes and/or standards relevant to your work.
- What engineering tools (e.g. sensors, computer software) did you have the opportunity to use over the course of your work term?

**Management of engineering:**

- Describe experience you gained with project management (planning, scheduling, budgeting, and risk assessment of projects).
- Although you may not have managed projects or supervised others during your co-op work term, you can identify role models and learn by critically thinking about what makes them successful.

**Communication skills:**

- Document the opportunities you had to develop your communication skills.
- Consider a wide range of communication types from day-to-day correspondence to formal reports; from routine oral reports for co-workers to presentations for audiences including senior management, regulatory agencies, clients and the public.
- Also consider skills such as listening and persuasion.

**Social implications of engineering:**

- To demonstrate your understanding of the social implications of engineering, identify:
  - o the benefits of your projects to the public
  - o social and environmental impacts of projects
  - o health and safety practices in your workplace

There are some additional attributes which you may consider discussing. These attributes are described in the supplementary documentation provided with these guidelines. Some of these attributes overlap with the PEO's areas of engineering experience. However, there are some new areas worthy of exploration including individual and team work as well as ethics and equity. The Canadian Engineering Accreditation Board expects graduates of engineering programs to possess the twelve attributes described. You may find this information useful for your critical analysis of experience and learning and for making connections between your learning in academic and work environments. Many of the experience areas and attributes include elements that are readily transferred to other professions. If you are preparing for a non-engineering career after graduation, you are welcome to provide this context for your critical analysis of experience in the next section.

**Critical Analysis**

There should be two components to the critical analysis section. First, you are expected to provide a critical analysis of your strengths and successes as well as areas in which you require additional skills, knowledge or experience. Simply stating you achieved your learning objectives is not sufficient. Second, you are expected to develop a plan to address the professional development needs that you identify. Whereas other sections may be largely descriptive, this section requires evaluation of your experience, skills and learning and you are expected to demonstrate insight (e.g. what is the relevance of experience or implications of gaps in learning). You may wish to get started by commenting on whether you were able to achieve your learning objectives. If so, what opportunities made this possible? If not, what barriers prevented you from achieving the objectives? How might you overcome these barriers in future jobs? You should focus on factors which are within your control (i.e. self-evaluation).

**Submission Requirements**

Work term reports are due by 4:00 PM on the 5<sup>th</sup> class day of the semester (refer to the University calendar if you need to confirm the date of the 5<sup>th</sup> class day). Reports are to be submitted electronically through the designated dropbox on your program specific Co-op Work Report CourseLink page. The Co-op Work Term Report –Employer Comments Form must also be submitted in the designated Employer comment dropbox within the same CourseLink page. No late submissions will be accepted without prior approval of your faculty advisor. Extensions will only be granted for exceptional circumstances.

## Grading of the Work Term Report

Work reports are graded by faculty. A grade of Outstanding, Very Good, Good, Satisfactory, or Unsatisfactory will appear on the student's Academic Record. Faculty will evaluate your report using the following criteria:

- Relevance of the engineering experience identified to the application of theory and the other areas of engineering experience (required to become a Professional Engineer) which you choose to discuss. There should be some breadth of coverage (i.e. the discussion should not focus too narrowly on a single area). There should also be good depth of discussion (i.e. provide some details or specific examples; expand on your points; avoid superficial descriptions). Some jobs will provide more opportunity for breadth and depth so the nature of the job responsibilities will be taken into consideration in the grading of the work term report.
- Breadth and depth of critical analysis. There should be good evidence of reflection on the experience. You are expected to demonstrate insights and awareness of how the experience has helped you to develop knowledge and competencies and what future experience and professional development you need to achieve your career goals.
- Quality of writing/report (organization, clarity and conciseness, use of English, maturity of style, use of figures)

If a report is very poorly written and/or shows an inadequate effort in the identification and evaluation of experience, it will be deemed unsatisfactory. A student who receives an unsatisfactory work report evaluation will be given **one opportunity** to make revisions and resubmit the report. The work term report must be resubmitted by the deadline specified by the faculty advisor AND address the identified deficiencies in order to be upgraded to satisfactory. Students who are resubmitting a work report will not be eligible to proceed to the next employment process until receiving a grade of Satisfactory or higher. If, upon resubmission, the work report evaluation is still Unsatisfactory, the student will be **required to withdraw from co-op**. The grade as well as the phrase "Req to Withdraw from Co-op" will appear on the Official Transcript. The student will then be transferred to the regular academic program.

Late submissions (without prior approval of the faculty advisor) will be graded as Unsatisfactory with no resubmission privileges. If a work term report is not submitted, the grade of Unsatisfactory as well as the phrase "Req to Withdraw from Co-op" will appear on the Official Transcript. The student will then be transferred to the regular academic program.

## Confidential Information

As noted on page one, employers must confirm that the contents of the work report do not disclose confidential information and students often raise questions about this issue. Remember that the co-op work term report is intended to provide an opportunity for students to consider their experience. It should be possible to do this in a way that protects confidential information. If it is not possible to provide the detail that you feel is necessary to describe certain job responsibilities or duties, focus on other responsibilities and explain your rationale. You can also indicate that you have kept certain descriptions more general or omitted specific examples due to concerns about disclosure of confidential information.

## Role of Faculty Reviewing Work Term Report

In addition to assigning a grade, faculty reviewers will provide suggestions for improving the quality of the written report. Faculty can help students to recognize their experience and relate it to the most appropriate areas (application of theory, practical experience, management of engineering, communication skills, social implications of engineering) or other graduate attributes. They can help students identify goals for future learning and experience.